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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/630,121	08/01/2000	Hao A. Chen	3620-023-01	8367

7590 07/26/2005

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EXAMINER
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WATKINS III, WILLIAM P

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/630,121

**Applicant(s)**

CHEN ET AL.

**Examiner**

William P. Watkins III

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 7-21, 31-33, 37-40 and 42-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-21, 31-33, 37-40 and 42-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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**DETAILED ACTION**

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7-21, 31-33, 37-40, 42-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson (U.S. 6,324,809 B1) in view of Nishibori (U.S. 5,869,138) and Graham (U.S. 4,849,768) further in view of Andres (U.S. 5,553,427).

Nelson teaches planks, which can be used to make up a floating floor: which can consist of a core layer, which may be PVC; and a decorative overlay, which may be a high pressure laminate (col. 2, line 50 through col. 3, line 45, col. 2, lines 1-5). The examiner notes that many options for the top and bottom layers of the core are taught, but that the core being exposed as the bottom surface, with a decorative laminate as the top surface, is a possible taught option (col. 2, lines 50-61). Nishibori '138 teaches printing a wood grain pattern on a

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background colorant coating on a core with a clear protective top coat, the core is comprised of thermoplastic resin, which is used as a wood board substitute flooring (abstract, Figure 1). Graham teaches the use of a digital printing system to form a realistic wood grain pattern (abstract, col. 9, line 55 through col. 10 line 30, col. 1, lines 40-55). Andres teaches the use of hollow cavities in a PVC floor plank as well as the use of feet to raise the plank off the floor (Figure 7). The instant invention claims the use of printing on the core of a PVC plank in a floating floor with the use of hollow cavities and feet on the planks. It would have been obvious to one of ordinary skill in the art to print directly on the plank of Nelson et al. instead of using a printed overlay in order to save the expense of construction of the overlay and provide a realistic wood grain pattern because of the teachings of Nishibori '138 to form a realistic wood grain pattern on a thermoplastic core by direct printing (abstract, Figure 1) and further obvious to use a digital wood grain pattern in order to have a realistic wood grain appearance because of the teachings of Graham. It further would have been obvious to use cavities and feet in the planks of Nelson in view of Nishibori '138 and Graham in order to lower the weight and amount of material used in the core and to raise

the planks off of the subfloor for the purposes of insulation because of the teachings of Andres. Nelson appears both explicitly and implicitly to teach rectangular planks with no type of cupping. The examiner therefore takes the planks of Nelson as modified above to be equivalent to the heat-treated planks of the instant claims. The examiner takes the background colorant layer of Nishibori '138 as being part of the final printed pattern since it forms a visible part of the pattern. In the alternate it would have been obvious to delete the colored layer and just print a wood grain pattern if a less realistic appearance is acceptable as a trade off to produce a lower cost final product due to the deletion of a process step.

3. Claims 31, 7, 10, 11, 12, 33, 32, 47, 51 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishibori (U.S. 5,869,138) in view of Graham (U.S. 4,849,768).

Nishibori '138 teaches a plank made of a thermoplastic resin with a printed pattern on the core and a top coat on the printed pattern (abstract, Figure 6). The thermoplastic may be PVC (col. 8, lines 45-55). The examiner takes the colorant coating as being part of the printed pattern design since the color forms a visible part of the wood grain pattern and

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therefore the printed pattern design is taken as being on the top surface of the core. Nishibori '138 appears both explicitly and implicitly to teach boards with no type of cupping. The examiner therefore takes the boards of Nishibori '138 to be equivalent to the heat treated planks of the instant claims. No backing layer is taught on the bottom of the core of Nishibori '138. Graham teaches the use of a digital printing system to form a realistic wood grain pattern (abstract, col. 9, line 55 through col. 10 line 30, col. 1, lines 40-55). The instant invention claims a thermoplastic plank with digital printing. It would have been obvious to one of ordinary skill in the art to have used a digital wood grain printed pattern on the plank of Nishibori in view of Graham in order to have a more realistic pattern because of the teachings of Graham.

4. Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishibori (U.S. 5,869,138) in view of Nishibori (U.S. 4,610,900) further in view of Graham (U.S. 4,849,768).

Nishibori '138 teaches a printed pattern on a thermoplastic core as noted above. Graham teaches a digital printed wood grain pattern as noted above. Nishibori '900 teaches thermal

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treatment of a thermoplastic core after molding in order to resist deformation of the core over time (abstract). The instant invention claims heat-treating of a thermoplastic core with a printed pattern. It would have been obvious to one of ordinary skill in the art to heat treat the board of Nishibori '138 in order to reduce deformation over time because of the motivation of the teachings of Nishibori '900 to heat treat thermoplastic boards to reduce deformation. It further would have been obvious to use a digital pattern as the wood grain of Nishibori '138 in view of Nishibori '900 in order to have a more realistic pattern because of the teachings of Graham.

5. Applicant's arguments filed 13 April 2005 have been fully considered but they are not persuasive.

Applicant argues regarding the combinations with Graham, that Graham does not teach digital printing but instead teaches the generation of random patterns by creating a piezoelectrically induced acoustic standing wave in a fluid supply chamber of a fluid jet applicator. The examiner disagrees. As noted in Graham at col. 5, line 60 through col. 6, line 5, the technique of Graham is applicable to an apparatus that has multiple charging electrodes that can produce indicia

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such as letters in combination with a controlled random pattern. Thus Graham clearly teaches a classical "digital image" such as indicia produced by a piezoelectric ink jet printer in addition to a random pattern that simulates wood grain. Moreover even the random wood grain pattern is controlled by a digital on and off signal from a control apparatus with a system of digital "AND gates" (col. 9, line 60 through col. 10, line 15). Thus even the random pattern that simulates wood grain can be considered as digital printing.

Applicant argues that Nishibori '138 teaches a coating layer on top of the printing and that this teaches away from substitution of direct printing for the decorative overlay of Nelson. The examiner does not see how both Nishibori '138 and Nelson having protective outer layers teaches away from the substitution. Applicant continues to argue that Nelson requires a backing layer. For the reasons given previously the examiner maintains the position the no backing layer is an option as well a no top layer. Nelson teaches using a decorative layer while Nishibori '138 teaches printing directly on a core. Both references are directed to decorative effects of plastic floor cores. The overall purpose of Nelson would not be destroyed by using the decorative technique of Nishibori '138. Regarding



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cupping, applicant continues to argue that the planks of the references will cup without heat treatment or backing layers, because it is known that this is a problem with some flooring systems. The references used in the rejections are silent on this point and the examiner does not infer that a problem with some flooring systems is also a problem with the specific cited references absent specific evidence about the references used in the rejections.

Applicant argues that Nishibori '138 teaches role print or floexographic printing. The Nishibori '138 reference is not limited to these means and broadly recites printing. Graham teaches a broad range of substrates and does not exclude plastic. Applicant's arguments regarding Andres are cumulative to those answered before.

Regarding the rejection with Nishibori '138 as a base reference applicant argues that the recesses and wood filler content of Nishibori '138 being less than 30% teach away from combination with Graham. As a first point at column 8, line 51, 30% is taught as a desirable amount of wood filler and 20% is taught as a lower limit. The reference teaches 20% to 65% wood filler. Applicant's argument regarding the percent of filler is not understood. Regarding the recesses, as noted in the

rejection, one might delete the grinding step if a less realistic appearance was acceptable for cost reasons. Regarding the combination not teaching a floating floor, the reference at col. 1, lines 40-50 teaches the wood board product of the reference is suitable for all conventional flooring uses of wood boards. Regarding thermal treatment, there is no evidence of record that the lack of an explicit thermal treatment in the reference produces a different product than that instantly claimed.

Regarding the rejection using Nishibori '900, applicant repeats the arguments that are addressed above and states that the use of reheating is different than that instantly claimed because it forms a skin layer. The position of the examiner is that the heat treatment is to relieve stress (col. 4, lines 10-25).

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action

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is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William P. Watkins III whose telephone number is 571-272-1503. The examiner works an increased flex time schedule, but can normally be reached Monday through Friday, 11:30 A.M. through 8:00 P.M. Eastern Time. The examiner returns all calls within one business day unless an extended absence is noted on his voice mail greeting.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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WW/ww

July 23, 2005

A handwritten signature in black ink, reading "William P. Watkins III". The signature is written in a cursive, flowing style with a large, stylized "W" and "I".

**WILLIAM P. WATKINS III  
PRIMARY EXAMINER**